

**PINE BARK BEETLE**

**SURVEY REPORT**

**UBC OKANAGAN CAMPUS GROUNDS**

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## **PINE BEETLE SURVEY REPORT - UBC OKANAGAN**

A pine bark beetle survey was carried out on UBC Okanagan Campus forest areas including the forested eastern portion of Endowment Land during January 13 - 16, 2015. Pine trees including those around buildings were examined for new beetle attacks following the 2014 bark beetle flights. This report provides survey methodology, survey results and recommendations for control.

### **Survey Method**

A walk through survey was done looking for any signs of foliage color change and evidence of new attack on the pine tree stems. Trees showing foliage color change as well as stems of trees with insect evidence such as pitch tubes, boring frass or woodpecker activity were checked for beetles by removing some bark and looking for insect evidence such as galleries, adult beetles and larvae. Galleries and insects were observed to determine if they were Western pine beetle (WPB) or Mountain pine beetle (MPB) and recorded. All pine trees around infested trees for a minimum distance of 15 meters were closely examined for signs of beetle attack to ensure all infested trees were identified and marked for removal. All pine trees around buildings including trees with verbenone repellent pouches were closely examined as well.

Yellow flagging tape was placed around the boles of currently infested trees. The numbers of attacked trees as well as diameter range and average diameters were recorded. Attack sites were plotted on a map. The number of attacked trees were noted on blue flagging tape and placed on a tree along with yellow tape at each currently infested site. In many instances, the sites were flagged with blue tape to a road, trail or forest edge and tie points established with blue and yellow tape.

### **Pine Beetles Observed**

The survey indicated that WPB are still attacking some trees but the population has declined. The 2014 Lindgren funnel trapping for pine beetles also indicated a decline with numbers collected being the lowest since trapping started in 2006. There were no MPB or red turpentine beetles (RTB) attacks observed during this survey.

Many of pine trees appear very stressed. They have some thinning and browning foliage and appear like they may have been attacked by pine beetles but there was no evidence of beetle attack on the tree stems. The majority of the attacked pines had little or no evidence of attack on the stems. The trees had to be examined very closely and in a lot of cases bark had to be removed to confirm that the trees were infested. It is very possible that more trees are infested higher up.

### **Verbenone Repellent Usage**

There were 200 verbenone repellent pouches placed on high value aesthetic trees around campus buildings and other important areas last summer. The trees with pouches and surrounding trees were closely examined during this survey. Only one verbenone treated tree was attacked by beetles. The tree is located west of University House. The repellent use has been quite effective.

### **Present Infestations**

A total of 22 attacked trees at 13 sites were flagged and recorded. The attack numbers range from 1 to 3 per site with an average of 1.7 per site. Attacked tree diameters range from 10 to 40cm with an average of about 24cm. The majority of the infested trees have red foliage but there are still pine beetles (adults and larvae) in the cambium layer or within the bark. The infested trees were marked with yellow flagging tape placed around the tree stems.

Refer to the attached data table and map for infestation details and locations.

### **Recommendations**

1. Control the spread of the pine beetles from currently infested trees prior to April 15, 2015 by removing the trees from UBCO property and disposing of the infested portions of the trees in a manner that would destroy the insects prior to beetle flight.
2. Remove the entire infested trees including branches and foliage from the sites for fire hazard and aesthetic reasons.
3. Endeavor to ensure neighboring property owners are aware of and are dealing with infestations on their properties prior to beetle flights in order to reduce the risk of insect spread onto UBCO property.
4. Consider continuing with Lindgren funnel trapping and verbenone pine beetle repellent placement this year to reduce the risk of further attacks and to mop up residual populations.
5. Carry out a bark beetle survey after 2015 pine beetle flights.

Survey data table and map for this survey is attached.



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January 29, 2015

PINE BARK BEETLE SURVEY DATA TABLE  
UBC OKANAGAN - JANUARY 2015

GENERAL LOCATION	SITE	ATTACKED TREES		TREE DIAMETERS (cm)		INSECTS		ATTACK LEVEL	COMMENTS
		G	R	RANGE	AVG.	WPB	MPB		
North West	A	4		19 - 26	22	x		M - H	Two with green foliage. 20m west of trail.
	B	1			25	x		H	Red foliage. 18m west of trail.
	C	1			35	x		M	Mostly red foliage. Bird house on tree.
	D	1			35	x		M	Mostly red foliage. Bird house on tree.
North Central	E	1			22	x		H	Red foliage. Close to trail.
	F	2		13 - 13	13	x		M - H	Red foliage. Trees are 22m apart.
	G	1			18	x		H	Red foliage. Broken top.
	H	2		20 - 22	21	x		H	Red foliage. Trees are 25m apart. Flagged S65E 60m to gas line.
	I	1			28	x		H	Red foliage. Tiepoint at site.
	J	2		17 - 18	17.5	x		M - H	Close to gas line. Trees are 40m apart.
North East	K	3		10 - 18	14	x		M - H	Flagged to road. Red foliage.
South	L	1			30	x		H	South end of the pond. Water level stressed the tree.
	M	2		33 - 40	36.5	x		M - H	Mostly red foliage. West of University House.
<b>TOTALS</b>		<b>22</b>	<b>0</b>						

**Legend**

G - Trees with current beetle populations  
R - Red foliage trees - No current beetles

L - Light attack level  
M - Moderate attack level  
H - Heavy attack level